

## SOME NEW AND NOTEWORTHY RECORDS OF MOSSES MOSTLY FROM QUEENSLAND, AUSTRALIA.

By ILMA G. STONE

Botany School, University of Melbourne

The moss records listed herein are based mainly on collections made during trips to Queensland in 1969, 1975 and 1978-80 but do not represent a complete list of new mosses found. In addition to the Queensland records there are eight from the Northern Territory, five from the Kimberley area of Western Australia, three from Victoria and one from South Australia.

Unless specifically mentioned, the records have not been published previously as far as I have been able to ascertain. Newly published records for Queensland are marked with an asterisk\*. Both the family order and the assignment of genera to families follow those given by Crosby & Magill (1977), and genera are arranged alphabetically in their respective families.

All collecting trips were made with the assistance of my husband Alan Stone. Collections from South Bald Rock, Girraween National Park, east of Wyberba, Queensland, near the N.S.W. border were made in the company of Ranger Paul Grimshaw and his wife Leanne; those from the Shire of Cardwell with Arthur and Margaret Thorsborne. Others who assisted are mentioned individually with the appropriate citations.

Although most of the new additions to the Queensland flora do not represent unexpected range extensions, among them are some rare and interesting mosses including *Diphyscium*, *Buxbaumia* (including one new species), *Tristichella* n.sp., *Forsstroemia rigida* and *Pseudohypnella verrucosa*.

New records for the southern Queensland National Parks, Girraween, Lamington and Bunya Mountains have been previously recorded from states to the south of Queensland, whereas new records for areas north of the Tropic of Capricorn consist mostly of mosses already recorded from Indonesia, New Guinea, the Philippines, Malaysia and New Caledonia, and some which are much more widespread. Some of the earth mosses found in coastal areas between Ingham and Cooktown were already known from New Caledonia (e.g. *Phasconica*, *Trachycarpidium* and *Archidium ohioense*), while the moss flora of the drier deciduous scrub country of Chillagoe and Mungana c. 240 km west of Cairns, over the Great Dividing Range, shows an interesting affinity with the flora to the west including Mt Olga Gorge and particularly that of the north-west Kimberley area of Western Australia. Practically all the mosses so far found in the Kimberley area occur at Chillagoe e.g. *Erpodium*, *Trachyphyllum* and *Hyophila*, as well as further west in parts of India and Africa.

The daylight caves in the limestone towers at Chillagoe provide a different, more protected climate and *Thuidium furfursum* (Hook. f. & Wils.) Reicht. which is widespread in the southern hemisphere covers extensive areas of the limestone floors. An investigation of the interesting moss flora in the caves has not been completed.

\* *Fissidens leptocladus*, *Echinodium hispidum* and *Achrophyllum dentatum* have recently been recorded from Queensland by Streimann and Tovia in *J. Hattori Bot. Lab.* 49:261-271 (Jan. 1981).

Three of the generic records for South Bald Rock, Girraween National Park, are of particular interest. These mosses, *Andreaea*, *Rhacocarpus* and *Rhacomitrium* are found in montane regions in the states to the south of Queensland and find a suitable habitat at South Bald Rock which is an adamellite (granitic) outcrop, altitude c. 1200 m, with very low winter temperatures.

#### ANDREAEACEAE

\**Andreaea mutabilis* Hook. f. & Wills.: South Bald Rock, Girraween N.P., Qld, on rock (I.G.S. 13509, May 1978). Vitt (1980) has shown that this ecostate species is distinct from *A. rupestris* Hedw. with which it has been combined, and it is doubtful if *A. rupestris* occurs in Australia. A new generic record for Qld.

#### FISSIDENTACEAE

\**Fissidens leptocladus* C. Muell. ex Rodway: South Bald Rock, Girraween N.P., Qld, on soil in sheltered rock crevices (I.G.S. 13480, May 1978); Bunya Mts N.P., Qld (I.G.S. 13395, May 1978).

#### NANOBYRACEAE

\**Nanobryum thorsbornei* Stone: Recently described by Stone (1982b) this interesting new generic record for Australia has been found at various localities in Queensland, ranging from Cooktown to Kondalilla Falls N.P. The only other species is endemic to Africa and the genus appears to be close to *Fissidens*.

#### ARCHIDIACEAE

\**Archidium ? ohioense* Schimp. ex C. Muell.: McIlwraith Range, Cape York Penn., Qld, on soil in stream bed (coll. J. Clarkson 2602, Sept 1979, det I.G.S.); Five Mile Creek, Cardwell, Qld, on earth bank (I.G.S. 16288, August 1980); Edmund Kennedy N.P., Cardwell, on earth bank by stream (I.G.S. 16954, Sept. 1980). Unfortunately all specimens are without capsules but vegetatively fall within the range of variation given by Snider (1975) for the polymorphic *A. ohioense*. The perichaetial leaves are shorter than in typical material but this could be accounted for by immaturity. This species has not previously been recorded for Australia but has a very wide range including New Caledonia.

*Archidium rothii* Watts ex Roth: Chillagoe and Mungana Caves N.P., Qld, on earth in crevices of limestone rock (I.G.S. 15935, August 1979; I.G.S. 16741, August 1980). The type description (Roth 1914) which was made from a specimen from the Brisbane herbarium gives no specific locality but 'known only from Queensland'. The holotype has not been traced but Snider (1975), in his monograph of the genus, examined an isotype from S-PA and the locality given was Queensland, Alice Springs. The only known Alice Springs is in the Northern Territory but there are at least two Alice Rivers in Queensland. Both Prof. D. G. Catcheside (1980) and I have found *A. rothii* at Mt Olga Gorge, N.T. (D.G.C. 76,312, Sept 1976; I.G.S. 5150, June 1977). As the original locality is somewhat in doubt I have included the recent collections in this list. Known only from Australia.

*Archidium 'tatei'* an undescribed species from the Mitten herbarium, New York, collected at Adelaide River N.T., no doubt by Tate, is according to Snider (pers. comm.) close to *A. indicum* Hampe & C. Muell. in C. Muell. but specimens are sterile and identification must remain in doubt. The same taxon has been found at Prince Regent River Reserve, West Kimberley, W.A. (coll. K. F. Kenneally 2000, August 1974, det. I.G.S. verified J. A. Snider) and at Drysdale River N.P., W.A. by the same collector. Also at Katherine Gorge, N.T. on soil between rocks on river bank (I.G.S. 16224, July 1980).

All these *Archidium* species are perennial earth binding mosses forming firm mats, the lower parts of which consist of dead stems and leaves compacted with soil, the upper of new growth. They are mostly found on banks and in dry stream beds between rocks and tree roots where there is intermittent inundation with water.

#### VIRIDIVELLERACEAE

*Viridivellus pulchellum* Stone: Recently described (Stone 1976) this remarkable genus is so far endemic to Queensland.

#### DICRANACEAE

*Bruchia queenslandica* Stone: A recently described species (Stone 1977) so far found only near Finch Hatton Gorge and Carnarvon Gorge, Qld.

*Leucobryum* ? *candidum* var. *pentastichum* (Doz. & Molk.) Dix.: Oenpelli, Arnhem Land, N.T., in rainforest, coll. by National Parks officers, det. I.G.S. (I.G.S. 16241, July 1980).

*Leucobryum* ? *teysmannianum* Doz. & Molk.. Locality, etc. as for previous specimen (I.G.S. 16238, July 1980).

The determination of these species of a notoriously difficult genus are somewhat doubtful, but the genus *Leucobryum* has not previously been recorded for the Northern Territory.

*Dicranella howei* Ren. & Card.: Montrose, near Melbourne, Vic., on compacted earth bank in native plant nursery. The tiny fertile plants were mixed with and superficially similar to *Fissidens* particularly in their capsules (I.G.S. 11898 Sept. 1976). This moss is an introduction to Australia unless previously overlooked. It has an interesting distribution, occurring in the Mediterranean region, California and Washington, U.S.A. (Crundwell & Nyholm 1977);

*Trematodon longicollis* Michx.: Montrose, near Melbourne, Vic., on gravelly soil in nursery pots (I.G.S. 11896, Sept 1976). An introduction either from overseas or possibly from northern states. It is widely distributed in Europe, Asia, America and Oceania.

#### CALYMPERACEAE

*Calymperes moluccense* Schwaegr.: Berry Springs N.P., 64 km S. of Darwin, N.T., on papery bark on *Melaleuca* beside water, (I.G.S. 815, August 1968).

*Calymperes tenerum* C. Muell. var. *edamense* Fleisch. Berry Springs, N.T., on branches and trunks of trees near information centre (I.G.S. 16231, July 1980); and on track to lagoon, in company with Ranger D. Rice (I.G.S. 16232, July 1980).

*Syrhodon* sp.: Oenpelli, Arnhem Land, N.T., mixed with *Fissidens* sp. on humus, kindly coll. by park officers from Kakadu N.P. (det. I.G.S. 16242B, July 1980). The species has not been determined and more material is needed for a proper evaluation.

There appear to be no previously published records of Calymperaceae for the Northern Territory.

#### POTTIACEAE

\**Acaulon intergrifolium* C. Muell.: Girraween N.P., Qld, on bare earth in camping area (I.G.S. 13421, May 1978). Scott & Stone (1976) queried the occurrence of this species in Queensland. The specimen is immature and the species determination may not be correct.

*Acaulon mediterraneum* Limpr.: has recently been found to occur in Victoria at Rosanna, a Melbourne suburb, on a patch of bare earth in lawn (I.G.S. 1717, July 1969). Echuca, on Murray River flats (I.G.S. 14587, June 1979); Koonrook, on Murray River (A. C. Beaglehole 57192, Sept 1960 (MEL), as *A. integrifolium*) det. I.G.S., June 1980; and in South Australia at Donovan's Crossing near the Victorian border (A.C.B. 16227, July 1966 (MEL), as *A. integrifolium*) det. I.G.S. June 1980. This species is mainly distinguished by the spiky nature of the spore coat and very immature specimens would be difficult to separate from *A. integrifolium*.

\**Barbula indica* (Hook.) Spreng. in Steud. (syn. *Semibarbula orientalis* (Web.) Wijk & Marg.): Lawn Hill Creek, 250 km NNW of Mt Isa, Qld, in cracks on cliff above high water mark (coll. T. Farrell 946, August 1979 (BRI)) det. I.G.S. Lime encrusted but readily recognised by the coarsely papillose abaxial surface of the costa and numerous axillary gemmae; Spring Ck, Mungana, Qld on creek bank (I.G.S. 11676, August 1980). This polymorphic species is widespread in Africa, India, south east Asia, Oceania and America in tropics and warm temperate regions, but not previously recorded for Australia.

*Hyophila involuta* (Hook.) Jaeg.: Berry Springs, N.T., on rock in drain (I.G.S. 16230B, July 1980); Camp Ck., Mitchell Plateau, NW Kimberley, W.A. (I.G.S. 5380B, coll. K. Clayton-Greene Sept 1978). A widespread species, new to N.T. and W.A.

*Hyophila rosea* Williams: Drysdale River N.P., E Kimberley, W.A. (coll. K. Kenneally 4419 August 1976, (PERTH) det. I.G.S.; Windjana Gorge, W Kimberley, W.A. (coll. J. H. Willis s.n., July 1974, det. I.G.S.). Not previously recorded in Australia. There is some doubt about the determination as the specimens are sterile.

\**Leptodontium viticulosoides* (P. Beauv.) Wijk & Marg.: About 20 km E of Killarney, Qld, on rock adjoining border fence with N.S.W. (I.G.S. 13185, May 1978); Mt Kiangarow, Bunya Mts N.P. Qld, on trunk of large *Xanthorrhoea*, coll. in company with N. Ludke (I.G.S. 13334, May 1978), det. I.G.S. conf. R. H. Zander.

*Phasconica balansae* C. Muell.: Previously found only in New Caledonia this species was recently recorded from Ingham, Qld (Stone 1980b) and is abundant at Five Mile Creek, Cardwell, Qld, on bare earth near track (I.G.S. 16298, August 1980) and Conn Ck., Cardwell, on track (I.G.S. 16333, August 1980).

*Splachnobryum baileyi* Broth.: Berry Springs N.T., on dried crust of soil and algae on rock in drain (I.G.S. 16333, July 1980). New to the Northern Territory; the only previous record of this moss appears to be from Brisbane, Qld, on walls of a hothouse, Acclimatisation Society Gardens in 1888.

*Tortula pagorum* (Mild.) De Not.: Albert Street, Brisbane, Qld on trunks of street trees (*Bauhinia*) and in Botanic Gardens (I.G.S. 17598, May 1978); Canungra, Qld on street trees (*Cinnamomum*) (I.G.S. 17598, Sept 1980). recently recorded (Stone 1980a) for Queensland but no specimens cited.

*Tortula papillosa* Wils. in Spruc.: Found with *T. pagorum* on tree trunks in Brisbane, also at Mt Kiangarow, Bunya Mts N.P., Qld, on branch of *Acacia* (I.G.S. 13324, May 1978) and on bark of trees in Ravensbourne N.P., Qld (I.G.S. 13233, May 1978). Queried as a Queensland record in Scott & Stone (1976).

*Tortula rhizophylla* (Sak.) Iwats. & Saito: Recorded by Stone (1980a) from several localities in Queensland. This moss has a peculiar disjunct distribution and will probably eventually be found to be very widespread.

*Trachycarpidium brisbanicum* (C. Muell.) Stone: This moss is found in southern Queensland and northern N.S.W. and was recently discussed by Stone (1975, 1980b). Its range has been extended to north Queensland at Kirrama, Cardwell on bare earth of timber tracks in tropical rain forest (I.G.S. 16968, Sept 1980).

*Trachycarpidium* sp.: Helenvale, near Cooktown, Qld, on earth bank (I.G.S. 15817, August 1979). Probably a variety of *T. verrucosum* (Besch.) Broth., which is a New Caledonian moss. Recorded by Stone (1980b).

#### GRIMMIACEAE

*Rhacomitrium crispulum* (Hook. f. & Wils.) Dix.: South Bald Rock, Girraween N.P., Qld, on rock (I.G.S. 13543, May 1978). A range extension from the southern states.

#### EPHEMERACEAE

*Ephemerum cristatum* Hook. f. & Wils.: Rabbit Flat, Tanami track N.T., at edge of lagoon in shade of shrubs (I.G.S. 16220, July 1980). Previously recorded for all other Australian states.

#### BRYACEAE

\**Brachymenium nepalense* Hook. in Schwaegr.: Mt Fisher, Atherton Tableland, Qld, on rotting log (I.G.S. 15718, August 1979).

*Leptostomum macrocarpum* (Hedw.) Pyl.: Mt Kiangarow, Bunya Mts N.P., Qld, on trunk of *Xanthorrhoea* (I.G.S. 17500, Sept 1980). Readily distinguished from other Australian species by the branched hair points and unthickened lamina cells. Recorded by Watts & Whitelegge (1906) for Tasmania, N.S.W. and Queensland with a note that the records are doubtful. An examination of *L. macrocarpum* specimens in the British Museum revealed only two tiny pieces that were true *L. macrocarpum* purporting to come from mainland Australia. They were on a sheet from Herb. Hooker 1867 from Kew Gardens with seven specimens from New Zealand, and labelled H. 2444 from King Georges Sound and H. 2445 from N. Holland with no other information about locality. It is probable that they are N.Z. material which was thought to have come from Australia, and King George Sound is a very unlikely locality as no *Leptostomum* has been recorded from W.A. W. W. Watts specimen from Lord Howe Is. is authentic *L. macrocarpum* and the species also occurs on Norfolk Is.

#### RHIZOGONIACEAE

\**Hymenodon pilifer* Hook. f. & Wils.: Lamington N.P., Qld, on treefern trunk (I.G.S. 4226, August 1969). A range extension from southern states.

*Mesochaete taxiforme* (Hampe) Watts & Whitelegge considered by Brotherus (1904) to be the same as *M. undulata* Lindb has recently been shown to be a good taxon with *M. grandiretis* Dix. conspecific (Stone 1983a). It has been found from Windsor Tableland south to Maleny, Qld.

## BARTRAMIACEAE

*Bartramia papillata* Hook. f. & Wils.: South Bald Rock, Girraween N.P., Qld, on earth in rock crevices (I.G.S. 13514, May 1978). Listed for Qld by Forsyth (1900) but omitted by Scott & Stone (1976).

\**Breutelia affinis* (Hook.) Mitt.: South Bald Rock, Girraween N.P., Qld, on earth in rock crevices (I.G.S. 13441, May 1978).

## ERPODIACEAE

\**Erpodium australiense* Stone: This recently described species (Stone 1982a) is a new generic record for Australia and occurs on trunks and branches of *Bauhinia hookeri* in deciduous scrub at Chillagoe and Mungana N.P., Qld and in the gorges of West Kimberley district in Western Australia.

## ORTHOTRICHACEAE

\**Orthotrichum tasmanicum* Hook. f. & Wils.: Mt Elliot N.P., Qld, (I.G.S. 18487, May 1978).

\**Zygodon intermedius* B.S.G.: Killarney, Qld, (I.G.S. 14610, July 1979). These two species are common in southern states and *Orthotrichum* is possibly a recent introduction in north Queensland.

## HEDWIGIACEAE

\**Hedwigia integrifolia* P. Beauv. (syn. *Hedwigidium integrifolium* (P. Beauv.) Dix.): South Bald Rock, Girraween N.P. Qld, on rock (I.G.S. 13449, May 1978).

\**Rhacocarpus purpurascens* (Brid.) Par.: Same locality, on wet rock in large crevice (I.G.S. 13442, May 1978). Previously recorded from southern states, New Zealand, Africa and America.

## CRYPHAEACEAE

\**Forsstroemia rigida* Dix.: Windsor Tableland, W of Daintree, Qld, in rainforest (I.G.S. 16137, August 1979). A large frondose moss on trunks of trees and large buttress roots; apparently very rare, previously recorded only from New Guinea.

## METEORIACEAE

\**Papillaria flavolimbata* (C. Muell. & Hampe) Jaeg.: South Bald Rock, Girraween N.P., Qld, on rock (I.G.S. 13518); Bunya Mts N.P., Qld, on rock scree coll. in company with *N. Ludke* (I.G.S. 13416, May 1978).

## NECKERACEAE

*Leptodon smithii* (Hedw.) Web. & Mohr.: Mt Kiangarow, Bunya Mts N.P., Qld, alt. c. 1100m, on tree branches (I.G.S. 13174, May 1978). Recorded by Scott & Stone (1976) for Queensland but without locality.

*Pinnatella* sp.: Mungana, c. 250 km W of Cairns, Qld, on limestone in daylight cave in company with *L. Leafe* (I.G.S. 16733, August 1980). A large moss with erect frondose branches, the leaves with an intramarginal border similar to that of *P. alopecuriodes* (Hook.) Fleisch. and *P. intralimbata* Fleisch.

*Thamnobryum ellipticum* (Bosch & Lac.) Nog. & Iwats.: Crystal Cascades, Cairns, Qld, on rock in rainforest (I.G.S. 15351, July 1979). Previously recorded from the islands to the north of Australia and Oceania.

*Thamnobryum pandum* (Hook. f. & Wils.) Stone & Scott: Bunya Mts N.P., Qld, on rock (I.G.S. 4576, August 1969); Kondalilla Falls, Blackall Range, Qld, on rock (I.G.S. 4662, August 1969); Bunyip Falls, Lamington N.P., Qld, on rock (I.G.S. 4447, August 1969); Eungella N.P., Qld, (I.G.S. 17144, Sept 1980). Recorded by Scott & Stone (1976) for Queensland but without localities.

\**Thamnobryum pumilum* (Hook. f. & Wils.) Nieuwl.: Tim Shea Falls, Bunya Mts N.P., Qld, on rock (I.G.S. 17490, Sept 1980).

#### LEMBOPHYLLACEAE

\**Camptochaete leichhardtii* (Jaeg.) Broth.: Staircase Falls, Laminton N.P., Qld, epiphytic on twigs (I.G.S. 14003, Oct 1976); Blue Pool, same locality, collected in company with M. Olsen (I.G.S. 17566, Sept 1980). Previously recorded from N.S.W.

#### ECHINODIACEAE

\**Echinodium hispidum* (Hook. F. & Wils.) Jaeg.: Bunyip Falls, Lamington N.P., Qld, in crevices of wet rock (I.G.S. 4452, August 1969); Blue Pool, same locality, coll. in company with M. Olsen (I.G.S. 17567, Sept 1980).

#### HOOKERIAACEAE

\**Achrophyllum dentatum* (Hook. f. & Wils.) Vitt. & Crosby: Lamington N.P., Qld, on earth in damp gullies (I.G.S. 4227, August 1969); Tim Shea Falls, Bunya Mts N.P., Qld, (I.G.S. 17487, Sept 1980); Eungella N.P., Qld (I.G.S. 17177, Sept 1980). The Queensland specimens appear to fall within the range of variation shown by this moss in the southern states.

\**Calyptrochaeta* sp. (syn. *C. eriopus*): Bellenden-Ker N.P., Qld (I.G.S. 16862, Sept 1980). Differing from other Australian species in cell size and combination of characters; without capsules but bearing propagules resembling those of *C. remotifolia* (C. Muell.) Tan & Touw, from which it differs in several features.

*Cyathophorum* sp.: Bellenden-Ker N.P., Qld, on rocks and trunks of small trees in gullies below Centre Peak (I.G.S. 15562, August 1979). At first thought to be a *Cyathophorella*, and in the absence of capsules a definite decision can not be made, but there are no gemmae present as is usual for that genus. It is similar to *Cyathophorum bulbosum* (Hedw.) C. Muell., the lateral leaves being practically the same in cell detail, but differs in the narrower amphigastrial leaves and different perichaetial leaves.

\**Ephemeropsis tjibodensis* Goeb.: Macnamree N.P., near Innisfail, Qld, epiphyllous on leaves of *Calamus* and broad-leaved shrubs (I.G.S. 15017, August 1979); Palmerston N.P., Qld (I.G.S. 16146, August 1979). Only male plants were found but vegetative propagules were numerous. It occurs on the islands to the north of Australia. *E. trentepohlioides* (Renn.) Sainsb., the only other species of this peculiar genus, occurs in New Zealand and Tasmania.

\**Hookeriopsis* sp.: Eungella N.P., Qld (I.G.S. 17122 Sept 1980), a genus new for Australia but with insufficient material for species identification.

\**Schizomitrium papillatum* (Mont.) Sull. (syn. *Callicostella papillata* (Mont.) Mitt.): Palmerston N.P., Qld (I.G.S. 15169, August 1979). Possibly recorded under another epithet.

#### LESKEACEAE

\**Pseudoleskea imbricata* (Hook. f. & Wils.) Broth. (syn. *Pseudoleskeopsis imbricata* (Hook. f. & Wils.) Ther.: Bunya Mts N.P., on rock (I.G.S. 13396, May 1978). Not uncommon in the southern states.

#### THUIDIACEAE

*Herpetineuron toccoe* (Sull. & Lesq.) Card.: Black Mt Road, N from Kuranda, Qld, on tree branch overhanging stream and covered with mud from flooding (I.G.S. 16150, August 1979); Massey Ck. Gorge, McIlwraith Range, Cape York Peninsula, Qld, mixed with *Leucoloma circinatulum* Bartr. in extensive mats on large boulders along stream banks (coll. J. Clarkson 2623B, Sept 1979 (BRI)) det. I.G.S.. Recorded from Queensland by Brotherus & Watts (1918) at Ravenshoe; the recent collections extend the range north in Queensland. Widespread in Africa, Asia and Oceania.

#### ENTODONTACEAE

*Trachyphyllum inflexum* (Harvey) Gepp: Lone Dingo outcrop, Mitchell Plateau, NW Kimberley district, W.A., on lateritic and basaltic boulders and tree trunks in dense semi-evergreen vine thicket, coll. K. Clayton-Greene, Sept 1978 (det. I.G.S. 5383); Camp Ck., same area, on tree trunks (det. I.G.S. 5380A); Davies Ck. Road, near Mareeba, Qld, on rotting log (I.G.S. 12293, May 1975); Chillagoe and Mungana Caves N.P., Qld, on trunks of *Bauhinia hookeri* (I.G.S. 15929, August 1979). New to W.A., but previously recorded in Queensland from Thursday Is. and Cape York, the present collections represent a southerly and westward extension in Australia. A widespread species in Africa, Asia and Oceania (Buck 1979). Both *Trachyphyllum* and *Erpodium* will no doubt be found in suitable habitats in the Northern Territory.

#### SEMATOPHYLLACEAE

\**Clastobryum* sp. Dallachy Ck., Cardwell, Qld, on rotting logs (I.G.S. 16431, 16445, August 1980). The species has not yet been determined; specimens are sterile but have the characteristic leaf structure and axillary propagules near the apices of branches. The genus has not previously been recorded for Australia but is common in the islands to the north.

\**Pseudohypnella verrucosa* (Doz. & Molk.) Fleisch.: Eungella N.P., Qld, on bank of stream in montane rainforest mixed with other mosses (I.G.S. 17120, Sept 1980). New to Australia this monotypic genus occurs in south east Asia and the islands to the north of Australia.

*Taxithelium nepalense* (Schwaegr.) Broth.: Berry Springs N.P., 64 km S of Darwin, N.T., on *Melaleuca* (I.G.S. 816, August 1968); same locality, on bark, coll. with D. Rice (I.G.S. 16233, July 1980). Apparently the first record of a pleurocarpous moss for the Northern Territory (Willis 1957). Widespread in Africa, India, Malaysia, the islands north of Australia and possibly from Queensland under another epithet.



\**Tristichella* n.sp.: Bellenden-Ker N.P., Qld; common on twigs and branches of shrubs near Centre Peak (I.G.S. 12123, May 1975; 15567, August 1979). A distinctive glossy green to golden brown moss with closely set leaves in three regular ranks, the genus has not previously been recorded for Australia but occurs in the islands to the north and in Japan.

#### HYPNACEAE

\**Isopterygium limatum* (Hook. f. & Wils.) Broth.: South Bald Rock, Girraween N.P., Qld, (I.G.S. 13515, May 1978); Bunya Mts N.P., Qld (I.G.S. 13389, May 1978).

#### BUXBAUMIACEAE

\**Diphyscium* ? *mucronifolium* Mitt. in Doz & Molk.: Mossman Gorge N.P., 5 km from Mossman, Qld, on partly decayed granitic rock beside stream in tropical rainforest (I.G.S. 8830, May 1975); Bellenden-Ker N.P., Qld, on partly decayed granite rocks in gullies just below Centre Peak in montane rainforest (I.G.S. 15622 August 1979 coll. A.G.S.; I.G.S. 16841, Sept 1980); Eungella N.P., Qld, on rocks, mostly in intermittent streams without water during dry season (I.G.S. 17025, Sept 1980); Mt Bartle Frere, on granite boulders bordering stream in montane rainforest just below south summit (coll. M. Olsen s.n. (BRI), April 1980, det. I.G.S.). Apparently differing from *D. rupestre* Doz. & Molk. only in the absence of teeth on the leaf margin. The genus occurs mostly in the northern hemisphere and has not been previously recorded for Australia.

\**Buxbaumia colyeriae* Burges: Bellenden-Ker N.P., Qld. Habitat as for *Diphyscium* and sometimes on the same rock (I.G.S. 16840, Sept 1980, coll. A.G.S.). Appears to differ from New Zealand *B. novae-zelandiae* Dix. only in the slightly shorter and blunter operculum and usually shorter seta. *B. colyeriae* has been found only once before in N.S.W.

\**Buxbaumia thorsborneae* n.sp. Stone (1983b): Bellenden-Ker N.P., with *B. colyeriae* and *Diphyscium* (I.G.S. 16842, Sept 1980, coll. M. Thorsborne, det. I.G.S.). Close to *B. aphylla* but differing in some important features. *Buxbaumia* is a new generic record for Queensland. Except where indicated all specimens are in my private collection which will be deposited at MELU. Duplicates and types of Queensland specimens will be lodged at BRI.

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